

### Remarks

Claims 3, 5, 8, 15, 17, 18, and 21-23 remain in the application.

The amendments include those made in the Rule 116 amendment filed 31 January, 2005 but whose entry or non-entry was never indicated. Specifically, claim 8 has been amended to correct editorial errors that crept into the claim in the amendment filed 12 August 2003 as well as other editorial improvements, none affecting the scope of the claim..

The Examiner has objected to the drawings under 37 CFR 1.83(a) as failing to show every feature of the invention as claimed, specifically the payload of claim 14. In the interest of simplifying issues, claim 14 has been canceled so that this objection is now moot.

The examiner has rejected claims 4 and 9 under 35 U.S.C. §112, ¶1. The examiner has rejected claim 2 under 35 U.S.C. §112, ¶2. These claims have been canceled.

The Examiner has rejected claims 1-11 and 13-20 under 35 U.S.C. 103(a) as being obvious over Chang (U.S. Patent 6,525,850) in view of Mizrahi (U.S. Patent 6,067,181). The Examiner has rejected dependent claim 12 under 35 U.S.C. 103(a) as being obvious over Chang in view of Mizrahi and Gehler (U.S. Patent 6,400,872). These rejections were previously argued and may yet be argued in further prosecution.

However, the response now will focus on the sub-carrier multiplexing performed upon the payload modulated carrier. While Chang in his background section at page 6, lines 25-34 mentions sub-carrier multiplexing, Chang's disclosed device does not perform sub-carrier multiplexing on the payload modulated optical carrier as the term sub-carrier multiplexing is understood in the art and is described by the inventor. At best, Chang discloses a system that subcarrier multiplexes on the header modulated optical carrier and then combines that signal with the payload modulated optical carrier.

Unamended claim 3 requires applying the modulated optical carrier to an optical modulator adapted for writing new subcarrier modulated control information. In contrast, Chang in FIGS. 12 and 15, Chang writes in write element 1294 or possibly in modulator 1296

apparently using a  $\text{LiNbO}_3$  modulator, although his description at col. 21, line 7 to col. 22, line 13 is very confusing and the description of FIG. 15 at col. 24, lines 34-54 does not remove the ambiguity. The illustrated combination of the write element 1294 and modulator 1296 receive only external inputs that are electrical. They do not receive optical signals on the delayed payload line 1208. Apparently one of these elements 1294, 1296 contains an optical source at the carrier frequency, but apparently an unmodulated source. In any case, Chang fails to disclose modulating the payload modulated optical carrier. This signal is then passed through a multiplier 1281 which also receives a signal at  $f_1$  associated with the new subcarrier or its replacement. The operation of the multiplier and even whether the  $f_1$  signal is electrical or optical is unclear. What is fairly clear is that the payload modulated optical carrier is not passing through the elements 1294, 1296, 1281 before entering the optical switch 1207 on line 1284 since the delayed payload modulated optical signal is entering the same optical switch on line 1208. There is certainly no reason for the payload modulated optical signal to enter the switch from two directions. As a result, Chang requires a laser to generate an unmodulated optical before it is modulated with the header information. The present invention does not require the additional laser.

Accordingly, Chang fails to teach modulating an already payload modulated optical signal with a control or header signal, as required by claim 3.

Similarly, claim 5, now rewritten in independent form, requires modulating the optical carrier for the payload to add a subcarrier containing new control information. Chang may add a subcarrier containing new control information but it is not by modulating the optical carrier including the payload. Therefore, claim 5 should be allowed.

Similarly also, claim 8 requires means for modulating the modulated optical carrier for the payload without control information to add new information.

Accordingly claims 3, 5, and 8 and claims dependent therefrom should be allowed.

New dependent claims have been added further specifying the modulation.

In view of the above amendments and remarks, reconsideration and allowance of all claims are respectfully requested. If the Examiner believes that a telephone interview would be helpful, he is invited to contact the contact attorney at the listed telephone number, which is on California time.

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